

# JIAYI (WESLEY) XU

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## EDUCATION

### UNIVERSITY COLLEGE LONDON

09/2023 – 06/2027

#### MEng Computer Science

- Intelligent System, Software Engineering, System Engineering, Computer Architecture and Concurrency, Logic, Intermediate Mathematics, Security
- Object-Oriented Programming, Principle of Programming, Algorithms, Theory of Computation, Introduction Mathematics, Discrete Mathematics, Engineering Challenge, Design and Professional Skills

## SKILLS

### Programming Languages

- Python, C, C++, C#, Java, JavaScript, HTML, Haskell, SQL

### Development Tools

- VSCode, IntelliJ IDEA, Cursor, Arduino
- PyTorch, TorchAudio, TensorFlow, Transformer, NumPy, Matplotlib,
- SpringBoot, FastAPI, Hugo, Next.js
- Bash, CMD, Git

## EXPERIENCES

### Large language Model Researcher, Backend Engineer

01/2025 – Present

#### Punky Labs, AIMO Project Group

- Contributed to backend architecture design for large language model (LLM) deployment using **Transformers** library.
- Developed **FastAPI** backend with **JWT** authentication, **Docker** deployment, **PostgreSQL** integration and testing.
- Designed and implemented training strategies for large language models, focusing on AI emotional companionship.
- Developed and **fine-tuned LLM models** using **PyTorch** and Transformer-based architectures.
- Fixed data integration between **Next.js** frontend and backend.
- Deployed and maintained a decentralized server backend using **Nginx**, **Supervisor**, and **Gunicorn**.
- Open-Source Backend Repository: [AIMOverse/AIMO-Models](#)

## PROJECTS

### Jamboxx-Infinite – UCL IXN Project

10/2024 – 03/2025

- Building **RESTful API** service for Voice Cloning, Voice Conversion services, built with **FastAPI**.
- **Deep Learning: PyTorch**, TorchAudio-based DDSP-SVC and Diffusion models for voice conversion.
- **High-Performance Computing**: CUDA GPU acceleration support.
- **Deployment Engineering**: Nuitka compilation to standalone executable.

### UCL Student Performance Manage System Web Development Project

10/2024 – 12/2024

- Implementing backend features using **SpringBoot**, **MySQL**, **MyBatis-Plus**, and **Git**, applying **Java** for business logic and database integration

### UCL Engineering Challenge Group Project: Bioreactor Control System

10/2023 – 01/2024

- Designed and implemented the string subsystem using **Arduino** and **ESP32**, enabling seamless integration between sensors, actuators, and the control system. Solve communication issues between **ESP32** microcontroller and cloud platform ThingsBoard,
- Optimize embedded system performance, applying knowledge of **IoT protocols (MQTT)** and **C++ programming** for device to-cloud communication.

### Personal Project: “How to install Windows System on your smart phone?”

02/2022 – 09/2022

- Customized **Linux kernels** and **bootloaders** to support multiboot between Android and Windows.
- Deployed Windows 11 ARM on Snapdragon 845, resolving driver and compatibility issues (GPU, Wi-Fi, power management), and optimized device performance.
- Utilized **ADB**, **Fastboot**, and **QFIL** tools for debugging and troubleshooting, improving stability while contributing solutions to open-source communities.